

Therapy

USSR

PANCHENKO, D., Professor

"Climate Made to Order"

Moscow, Nedelya, 16-22 Mar 70, p 19

Translation: The Queen: And what if I should wish that it were April?

The Professor: That is impossible, your Highness.

The Queen: Are you being impertinent again?

The Professor (imploringly): It is not I who objects to your Highness. It is science and nature.

The Queen in S. Ya. Marshak's story "The Twelve Months" is unfiar and coaricious. But nonetheless the professor is incorrect in his argument. If man really does need April, science has every possibility of giving him spring weather and the necessary climate...

Nedelya (No 47, 1969) has already informed its readers that

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PANCHENKO, D., Professor, Moscow, Nedelya, 16-22 Mar 70, p 19

the second biotron, an artificial weather clinic, is being built in the area near Moscow.

Hundreds of letters that have come to this publication testify that the news that "the biotron cures" has aroused the interest of many people. They ask that we write in detail about climatic therapeutics.'

The only previously existing biotron in the country has for ten years been attached to the Kiev Oblast Hospital and Department of Nervous Disorders of the Kiev Institute for Doctor Training. Our correspondent M. Glukhovskiy asked its founder, Honored Scientist of the Ukraine Professor Dmitriy Ivanovich Panchenko, to speak about it.

From his first breath man has been closely bound to his external environment by thousands of invisible threads. Each cell of his body reacts sensitively to the slightest changes in atmospheric conditions. Even in his most distant past man noted the influence of climate and weather on many diseases, especially those of the heart
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PANCHENKO, D., Professor, Moscow, Nedelya, 16-22 Mar 70, p 19

and circulatory system. In line with this, each of us can cite numerous examples that confirm how the way we feel changes during a quick drop in the temperature, or, say, during a storm.

Healthy people react more calmly to changes in the weather. The fact of the matter is that the human organism possesses an exceptionally large adaptive range. In fact, man can live and work even in the 60° C heat of the Sahara Desert, as well as in the -80° C cold of the antarctic. The reserve of defensive adaptive powers is not, however, limitless.

In the 1930's I was fortunate enough to participate in a study of the influences of atmospheric pressure, temperature and concentration on the human nervous system. The development of aviation, undersea travel, and diving created the necessity for such research. The research was conducted in a pressurized, controlled-temperature laboratory of the department of normal physiology under the guidance of Academician L. A. Orbell.

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Even then it was known that there is a limit to an organism's adaptability. An inevitable exhaustion of the adaptive reserve occurs under certain conditions of overload. Also discovered were previously unknown aspects of the interrelationship of the nervous system and internal organs, principally the heart and circulatory system.

In order to make clearer what I am speaking of, I will cite the following example. Alpiners know that during an increase in height the feeling of exhilaration is gradually replaced by a dullness, an inertness. And a point is finally reached beyond which further ascent is impossible without supplementary oxygen. Thus hypoxia, an oxygen deficiency, is intensified. Equilibrium is disturbed and "the human organism is the external environment."

Observations in the pressurized, controlled-temperature laboratory helped to determine the degree of human endurance. For the first time the idea arose of using stable atmospheric conditions for the reestablishment and possible normalization of defensive powers, which enable an ill person to adapt to the pitfalls of the external

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PANCHENKO, D., Professor, Moscow, Nedelya, 16-22 Mar 70, p 19

environment. After all, while acknowledging the great role that medication, physical therapy, and medical resort treatment play, one must not fail to note that even under the most ideal circumstances they cannot prevent the effect of atmospheric variations on the organism.

It was years before the idea found actual implementation in a biotron. In the spring of 1959 the hermetically sealed chambers of the biotron took in their first patients. Months passed. Spring slush was replaced by summer mugginess, autumn chill gave way to blizzards, but in the biotron's chambers there was only perpetual spring. Even in the first days of their stay in the biotron the patients recorded lower blood pressure, their headaches stopped, as did pains in the area of the heart, and they were able to sleep...

Doctors had the opportunity to regulate the entire spectrum of meteorological conditions on a vast scale, and to create and maintain for as long as desired stable atmospheric postures according to their own program. In the biotron one may create a climate that does
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PANCHENKO, D., Professor, Moscow, Nedelya, 16-22 Mar 70, p 19

not exist in nature.

With the help of automatic electronic controls a constant barometric pressure is maintained in the biotron's chambers at any time of the year. And this is exceedingly important in the case of a hypertonic disease, which is the most typical manifestation of a disruption of an organism's adaptability.

Optimum air humidity, strictly regulated temperature, and the necessary oxygen content (when increased oxygen is indicated) are all insured by air conditioners, special filters, an oxygen substation, and control and measuring devices. Everything has been anticipated; the predetermined level of air transfer, the necessary ionization, antibacterial cover, and separating the patients from noisy distractions and sharp electromagnetic variations....

Experimental clinical observations in the biotron (and over 4,000 persons have been treated here) confirmed with particular
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clarity the role of the nervous system in adaptation. These observations are helping to reveal the way in which hypertonic diseases originate and develop, and are bringing victory over them nearer.

In its most general outline the picture is as follows. During the development of man the cortex took on the role of the main "director", regulating the interaction of the organism with the environment. This is the principal, although not the only, regulator. The significance of other branches of the nervous system, as well as of the endocrine and circulatory systems, is great.

In a sick person's influence of the cortex is weakened, so that it is not able to mobilize the organism to counteract heavy loads, which grown like a rolling snow ball. As a result of this the older, pathological nervous mechanisms dormant in the cerebellum for a certain time, do not come to the fore. These cerebellar mechanisms cause vascular contractions and consequent feelings of sickness, disruption of vascular wall nourishment, and increased arterial pressure.

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By shielding patients in the biotron from the whims of atmospheric variations, we give the organism a period of rest in which to renew its adaptive and defensive powers.

Practice has confirmed that treatment in the biotron inhibits the development of hypertonic disease, to a significant degree restores work capacity, and helps prevent threatening complications. Medical practice has gained, in addition to medications and climatic treatment chambers (incidentally, Nedelya wrote about them, No 8, 1970, "The Hot Summer Season") still another means with which to combat hypertension.

The trial research period in the biotron has been completed, and completed successfully. We are convinced that it is opening vast new perspectives. Biotron chambers for operative and postoperative patients. Chambers for premature infants. Acclimatization of animals and plants. And how promising is the use of biotrons for engineering processes!

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Calculations indicate that with industrial production biotrons will be accessible to every city and oblast hospital.

After the conversation with D. I. Panchenko, Nedelya's correspondent visited one of the biotron chambers.

The outer hermetic door opens slowly, and we are in a special lock chamber. The door closes and the locking begins. With the aid of transfer taps a microclimate is created which is the same as the one maintained in the main chamber. Now one may turn the wheel of the interval hermetic door and enter the chamber. It has a high ceiling and is a well-lit, clean place. One has the impression of being transferred to the freshening atmosphere of a day in May, just after a thunderstorm had passed. One breathes easily and deeply.

"Okay?!", one of the ladies resting here asks not quite asking, and not quite asserting. We become acquainted. Yevdokiya Nesterovna Pobegun is a worker at an oil plant in Mironovka, Kievskaya Oblast. She has had hypertension since 1953. In 1966 she underwent a treatment program in the biotron. For three and a half years she did not

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go on sick-leave a single time. The disease made its presence known again only after she overworked once in the sun.

Her two-week stay at the clinic is coming to an end. Her blood pressure levelled off and does not exceed its norm. Her neighbors in the chamber, Kievites L. A. Rubinskaya and L. M. Kanonskaya, and Ye. Ye. Novikovaya from Kostroma, also feel very well.

"This is no different from a mountain resort," remarks L. A. Rubinskaya. "And what is especially pleasant is that there are no medicines whatsoever."

And in fact there are none. There is only spring. There is only May, as ordered. There are only science and nature at man's service.

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Acc. Nr.: AP0029817

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 81-86

SUMMARY
ECHOENCEPHALOGRAPHY AS AN ADJUNCTIVE MENTHOD
IN THE NEUROLOGICAL CLINIC

D. I. Panchenko and Ye. L. Macheret (Kiev)

Results indicate that echoencephalography is a promising valuable method as it allows to investigate not only topical aspects of the disease but also to get ideas about the etiology of the process.

Echoencephalography is of help in studying the dynamics of the disease which is of particular value in the postoperative period and in patients with vascular pathology. The method is simple and safe, has no contraindications. Wide introduction of this method into clinical practice is recommended.

MK

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REEL/FRAME

19681503

Extraction and Refining

USSR

UDC:669.35.046.54/55

YAKOVLEVA, N. G., PANCHENKO, I. G. and OSINTSEV, V. G.

"Refining of Oxygen-Free Copper"

Moscow, Tsvetnyye Metally, No 2, Feb 74, pp 56-58

Abstract: The most difficult task in the refining of oxygen-free copper is the elimination of endogenic nonmetallic inclusions in the form of tiny gas pores located around the periphery of the cross section of the ingot at a depth of 5-35 mm. The use of the method of pouring through a mixer allows the reject rate due to ingot porosity to be reduced while increasing the productivity of the installation.

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USSR

UDC 612.014.21.015.12:(616.12:612.273.2.017.2

MEYERSON, F. Z., PANCHENKO, I. F., GOLUBEVA, L. Yu., LYUBIMTSEVA, O. N., and
PORTENKO, N. G. Laboratory of Experimental Cardiology Institute of Normal and
Pathological Physiology USSR, and Chair of Biochemistry Medicobiological Faculty,
Second Moscow Medical Institute imeni N. I. Pirogov

"The Role of the Lysosome System in the Prophylactic Effect of Adaptation to High-
Altitude Hypoxia in Disorders of the Heart"

Moscow, Kardiologiya, Vol 10, No 7, Jul 70, pp 71-79

Abstract: It was previously determined that systematic adaptation of animals to
intermittent high-altitude hypoxia increases the resistance of the heart to acute
stress. In an extension of this work, the lysosome systems containing protein
hydrolases (e.g., DNA-ase, RNA-ase, and phosphatase) were studied, using trained
and untrained rats. In trained animals, sudden high-altitude hypoxia was found to
result in a general increase in the levels of the three lysosome protein ases (to
124-135%), a decrease in the content of free protein ases (68.4-81.5%) and a marked
increase in the level of bound protein ases (244-268%). In untrained animals,
levels of all protein ases decreased except the level of bound RNA-ase, which
increased to 140.2%. Similar results were obtained in the latter group under
conditions of coarctation. Sudden hyperfunction of the heart in trained animals

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MEYERSON, F. Z., et al., Kardiologiya, Vol 10, No 7, Jul 70, pp 71-79

results in a release of free protein ases and a decrease in other ases. It is generally concluded that the binding of protein ases resulting from intermittent adaptation to high-altitude hypoxia increases the resistance of the cardiac lysosome system to acute stress.

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UDC 571.15.041

MEYERSON, F. Z., PANCHENKO, I. E., GOLUBEVA, L. Yu., LYUBIMTSEVA, O. N.,
and PORTENKO, N. G., Institute of Normal and Pathological Physiology,
Academy of Medical Sciences USSR, and Second Moscow Medical Institute
imeni N. I. Pirogov, Moscow

"Activity of Lysosome Enzymes of the Myocardium on Adaptation to High-
Altitude Hypoxia and in Heart Injuries"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 499-502

Abstract: Acute hypoxia causes labilization of lysosomes of the myocardium. It is assumed that the prophylactic effect in heart lesions of adaptation to high-altitude hypoxia involves an increase in the resistance of the lysosome system, together with an increased capacity to retain acid hydrolases in a latent state, so that these enzymes do not damage the tissue. To check the correctness of this assumption, the effects of adaptation to high-altitude hypoxia on the content of free and bound acid DNA-ase, acid RNA-ase and acid phosphatase in the myocardium were studied on rats without heart lesions, with heart hyperfunction produced by experimental coarctation of the aorta, and with sympathomimetic injury of the heart produced by administration of novodrine (isoproterenol) in a dose that produces necrotic

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MEYERSON, F. Z., et al, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 499-502

lesions. The rats were maintained for 6 hours per day over a period of 40 days at a pressure corresponding to an altitude of 6,000 m (the pressure was gradually reduced during the first week and then kept at this level). For rats without heart lesions, adaptation to high altitude hypoxia in this manner increased the total content of each of the three enzymes in the myocardium by 1/4-1/3 above that in controls. The content of the free enzyme fractions decreased by 20-30%, while that of the bound enzymes increased by a factor of approximately 2.5. Hyperfunction of the heart resulted in a decrease of the total content of all three enzymes, both when it was induced in rats after adaptation to high-altitude hypoxia and in rats that had not adapted. The decrease was lower for adapted than for unadapted rats, amounting to 35 vs. 47, 0 vs. 34, and 37 vs. 64% for acid DNA-ase, RNA-ase, and phosphatase, respectively. The smaller drop in the total content of lysosome enzymes in adapted animals was due to the fact that the content of the bound fraction was relatively greater. Similar relationships were found for rats in which heart lesions were produced by administration of isoproterenol (novodrine).

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172 023
TITLE--PHYSICAL PROPERTIES OF SOLUTIONS OF A PHENOL-CHLOROACETIC ACID
SYSTEM -U-
AUTHOR--PANCHENKO, M.F.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 266-70
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, PHENOL, ACETIC ACID, CARBOXYLIC
ACID CHLORIDE, PHASE DIAGRAM, ACTIVATION ENERGY, ENTROPY, EUTECTIC
MIXTURE, COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0204
CIRC ACCESSION NO--AP0113143
STFP NO--UR/0079/70/040/002/0266/0270
UNCLASSIFIED

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CIRC ACCESSION NO--AP0113143
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT. DATA ON VISCOSITY OF THE TITLE SYSTEM WERE PRESENTED OVER A TEMP. RANGE FROM 293DEGREEK TO 353DEGREEK AND THE PHASE DIAGRAM OF THE SYSTEM WAS SHOWN BASED ON VISCOSITY, COND. AND D. THE INTERACTION BETWEEN THE COMPONENTS IN THE SYSTEM IS SUCH THAT THE TEMP. COEFF. OF FREE ENERGY OF ACTIVATION OF VISCOUS FLOW IS NOT LINEAR AND DEVIATES AT 313-18DEGREEK FOR THE EUTECTIC, AT 323-13DEGREEK FOR PHOH AND 353-43DEGREEK FOR THE ACID. THE VALUES OF THE FREE ENERGY PASS THROUGH A MIN., THEN INCREASE WITH RISING TEMP. THIS IS ASCRIBED TO STRUCTURAL CHANGES CAUSED BY HEATING OF THE LIQ. ENTROPY OF ACTIVATION OF VIXCOUS FLOW NOT ONLY IS NOT CONST., BUT ACTUALLY CHANGES ITS SIGN WITHIN THE TEMP. INTERVAL STUDIED (SHOWN GRAPHICALLY ONLY), THUS INDICATING THE POSSIBLE CHANGE IN STRUCTURE OF THE COMPLEX FORMED BY THE COMPONENTS.

UNCLASSIFIED

Acc. Nr:

1100049944

Abstracting Service:

CHEMICAL ABST. 3-7

Ref. Code:

UR 0314 /

101317a Liquid-holding properties of some substances dried from organic liquids and water. Kaminskiy, L. P.; Bel'dii, V. V.; Dushchenko, V. P.; Sazhin, B. S.; Panchenko, M. S. (USSR). *Khim. Neft. Mashinostr.* 1970, (1), 6-8 (Russ.). The heat of vaporization of MeOH, Me₂CO, CCl₄, and H₂O from kaolin, loam, potato starch (I), polycarbonate, poly(vinyl chloride), and chloridic anhydride was detd. from thermal anal. heating curves of isothermal drying and sorption and adsorption isotherms. All of the materials cited had considerable amts. of adsorbed liq. The amts. of liq. retained by the polymers were detd. The sp. heat of vaporization was inversely proportional to temp. Increased temp. had different effects on the polymers, depending on their phys. structure; for instance, in I there was a significant swelling which increased its surface area and the amt. of the liq. retained.

CKJR

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REEL/FRAME
19801880

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USSR

YEREMENKO, V. N., BUYANOV, YU. I., and PANCHENKO, N. M., Institute for Problems of Material Science, Academy of Sciences Ukrainian SSR

"Structure of Polythermal and Isothermal Sections of the System Titanium--Copper--Silver; Report 2"

Kiev, Poroshkovaya Metallurgiya, No 5, May 70, pp 73-78

Abstract: Thermal and x-ray phase analyses were conducted of the structure of three polythermal sections of the phase diagram of the titanium -- copper -- silver system: at 5 at% Ag, at 60 at% Ag, and the radial section TiAg (Eta) -- Cu. Based on the structure of the polythermal sections and liquidus surface, isothermal sections were plotted of the titanium -- copper -- silver system at 1300, 1005, 960, and 900°C. The scheme of processes occurring in the titanium -- copper -- silver ternary system and its binary systems is given. Data on the structure and some phase properties of the titanium -- copper and titanium -- silver systems are presented in a table. The phase diagram of the copper -- silver system is related to the simple eutectic type with limited solubility of the components in the solid state. The scheme of monovariant and nonvariant equilibria for the titanium -- copper -- silver system is presented. The temperatures of covariant conversions were defined more precisely, and it was shown that the phase Ti_2Cu_3 (Theta) forms

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YEREMENKO, V. N., et al., Poroshkovaya Metallurgiya, No 5, May 70, pp 73-78
at 890°C according to the peritectic reaction $L + \text{Ti}_3\text{Cu}_4 \text{ (Epsilon)} \rightleftharpoons \text{Ti}_2\text{Cu}_3$
(Theta) and decomposes at about 800°C according to the eutectoid reaction Ti_2Cu_3
(Theta) $\rightleftharpoons \text{Ti}_3\text{Cu}_4 \text{ (Epsilon)} + \text{TiCu}_4 \text{ (Xi)}$.

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USSR

UDC: 621.396.662:621.396.679

BAZANOV, V. U., KOZLOV, B. M., ~~PANCHENKO, V. A.~~

"An Adapter for a Rod Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 9, Mar 72, Author's Certificate No 331459, Division H, filed 5 Jun 70,
published 7 Feb 72, pp 172-173

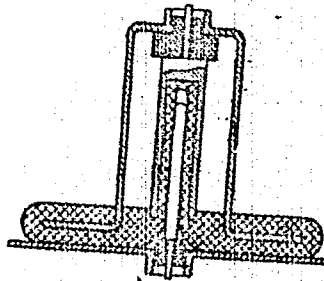
Translation: This Author's Certificate introduces: 1. An adapter for a rod antenna. The device contains a rigid section of coaxial line fitted with a standard coaxial connector. The adapter also includes a flange-supported housing which is simultaneously a shield. As a distinguishing feature of the patent, connection is simplified and reliability is improved, and also provision is made for DC isolation of the adapter from the antenna by making the central conductor of the coaxial line in the attachment in the form of an expanded hollow cylinder which forms an open coaxial line section together with the antenna rod. The support flange serves as the outer conductor of the coaxial line in the adapter. The flange is located in the insulator and forms an open section of radial line together with the base of the antenna. 2. A modification of this adapter distinguished by the

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BAZANOV, V. U. et al., USSR Author's Certificate No 331459

fact that matching with a top-fed antenna is improved by making a cylindrical constriction directly encompassing the insulator in the outer conductor of the coaxial line of the adapter within the limits of the protruding part of the antenna base.



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1/2 019
TITLE--HIGHER FREQUENCY STATIC SUPPLY SOURCES BASED ON MAGNETIC ELEMENTS
-U-
AUTHOR--(04)--ROYZEN, S.S., STEPE, F.YU., PANCHENKO, V.A., SAYENKO, V.M.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ELEKTRICHESTVO, NO 2, 1970, PP 72-74
DATE PUBLISHED--70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., METHODS AND EQUIPMENT
TOPIC TAGS--FREQUENCY METER, FREQUENCY CONVERTER, HIGH FREQUENCY, MAGNETIC METHOD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1233
CIRC ACCESSION NO--AP0123197
STEP NO--UR/0105/70/000/002/0072/0074
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SHORT ANALYSIS IS MADE OF THE WORKING CONDITIONS OF A ONE STAGE, MAGNETIC OCTUPLE FREQUENCY METER. THIS SERVES AS THE BASIS FOR INDUSTRIAL, STATIC FREQUENCY CONVERTERS (50-400 CPS) OF THE PCHMS SERIES. ORIGINAL ARTICLE: TWO ILLUSTRATIONS AND FOUR BIBLIOGRAPHIC ENTRIES.

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USSR

UDC 621.373.531.3(088.8)

IVAKHNENKO, M. M., PANCHENKO, V. A., SAYENKO, V. M., PROKHORCHUK, YE. F.

"Controlled Trapezoidal Oscillator with an Exponential Decay"

USSR Author's Certificate No 275111, Filed 10 Jul 68, Published 15 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G234P)

Translation: An oscillator made of magneto-transistor elements is proposed. It contains two transistors and two magnetic toroidal cores included in a balanced circuit. In order to reproduce the proper shape of the exponential decay and keep the pulse amplitude invariant during the period of variation of the coefficient of the exponent and during the process of variation of the output signal frequency, a saturation choke with binary control is connected to the common collector circuit of the transistor in series with the power supply and the secondary information sensor. The first control winding is connected to the first information circuit and forms an auxiliary electrical and magnetic coupling, and the second winding is connected to the second information circuit opposite, and it forms only a magnetic coupling together with the collector circuit.

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UDC 533.9

KITSENKO, A. B., PANCHENKO, V. I., and STEPANOV, K. N., Physico-Technical Institute of the Academy of Sciences, USSR

"Low-Frequency Parametric Instabilities of Plasma in a Variable Electric Field"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 18, No 10, October 1973, pp 1591-1598

Abstract: This article examines non-resonance parametric instability of plasma in a variable electric field, whose frequency is on the order of the lower hybrid frequency ω_{LH} or slightly exceeds it. The authors find the increments of growth in the hydrodynamic oscillations of a "cold" plasma with a frequency on the order of ω_{LH} , ion-sound and electron-sound oscillations the case in which the drift velocity of the electrons relative to the ions in a direction perpendicular to the magnetic field is greater than the thermal velocity of the ions but less than the thermal velocity of the electrons. The max-

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KITSENKO, A. B., et al., Ukrainskiy Fizicheskoy Zhurnal, Vol 18, No 10,
Oct 73, pp 1591-1598

imal increment of the growth of these oscillations is on the order of ω_{UH} . The authors divide this article into several parts and give a detailed description in each. They first discuss the dispersion equation and go onto consider hydrodynamic oscillations. Ion sound and electron sound are studied separately. The article contains 10 bibliographic references.

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USSR

IOFFE, R. L., PANCHENKO, V. I. (Moscow)

UDC: 621-752:621.225

"Investigation of the Influence of the Number of Impeller Blades of Hydrodynamic Machines Upon Their Vibroacoustic Characteristics"

Moscow, Mashinovedeniye, No 1, Jan-Feb 72, pp 20-24

Abstract: Oscillations at blade frequencies and their higher harmonics, originating in hydrodynamic and some other machines of the blade type, are manifested in the spectral composition of vibroacoustic fields usually in the form of clearly expressed discrete components. Experimental research conducted in connection with nonsteady processes in such machines makes it possible to evaluate, in a first approximation, the character of flow of the working fluid at the exit from the pump impeller, and makes it possible to adopt for subsequent consideration, in linear formulation, the relationship of the lift force P on the blade of the guiding mechanism to time. A centrifugal pump, in which the oscillations with blade frequency have a wave length considerably greater than the geometric dimensions of the pump is also considered. With a finite number of blades in the guiding mechanism, periodic forces act upon the body of the centrifugal pump, these periodic forces being brought to an excitation torque and a transverse force which cause vibrations and noise in

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IOFFE, R. L., PANCHENKO, V. I., Mashinovedeniye, No 1, Jan-Feb 72, pp 20-24

the pump. The article deals with the influence of the blade number of the pump impeller and of the guiding mechanism upon the character and intensity of excitation of oscillations at blade frequency, which originate in the structural elements of hydraulic machines. Relationships are obtained, which make it possible by selecting the appropriate number of blades, to provide minimal values of total exciting transverse forces and moments. Three figures, one table, seven references.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INFLUENCE OF AROMATIC RINGS AND THEIR SUBSTITUENTS ON THE MUTAGENIC
ACTIVITY OF NITROGEN MUSTARDS -U-
AUTHOR--(04)-KOVALENKO, S.P., SHISHKIN, G.V., PANCHENKO, V.K., RAPP, L.B.
COUNTRY OF INFO--USSR
SOURCE--GENETIKA 1970, 6(2), 103-9
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NITROGEN MUSTARD, MUTAGEN, ASPERGILLUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0597 STEP NO--UR/0473/70/006/002/0103/0109
CIRC ACCESSION NO--AP0122718
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NU--AP0122718

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MUTAGENIC ACTIVITY OF THE FOLLOWING N MUSTARD DERIVS. WAS TESTED BY THE REVERSE MUTATION METHOD IN AN ARGININE REQUIRING STRAIN OF ASPERGILLUS NIDULANS: RNICH SUB2 CH SUB2 X) SUB2 .HX (I) AND P,R PRIME C SUB6 H SUB4 NICH SUB2 CH SUB2 CL) SUB2. HCL (II), WHERE R EQUALS BENZYL, PH, OR 5,MEC SUB6 H SUB4, X EQUALS CL OR BR, R PRIME EQUALS ME, F, CL, BR, OR I. THE MUTAGENIC ACTIVITY OF THE COMPS. WAS COMPARED WITH THAT OF ETHYLENIMINE (EI) AND TRICHLOROETHYLAMINE (TCE). THE MOST ACTIVE MUTAGEN OF THE I DERIVS. WAS BIS(2,BROMETHYL) BENZYLAMINE, FOLLOWED BY BIS(2,BROMOETHYL),5,METHYLPHENYLAMINE, BIS(2,CHLOROETHYL) BENZYLAMINE AND BIS(2,BROMOETHYL)PHENYLAMINE (IN DECREASING ORDER). ALL 4 WERE MORE ACTIVE THAN EI OR TCE; THE REMAINING 2 CL DERIVS. WERE MORE ACTIVE THAN TCE ONLY. SUBSTITUTION OF THE ME OF II BY HALOGENS DECREASED THE MUTAGENIC ACTIVITY IN DIRECT RELATION TO THE AT. WT. OF THE SUBSTITUENT.

FACILITY: DIV. MOL. BIOL. GENET., AKAD. SCI. UKR. SSR, KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 531.7.087.92

PANCHENKO, V. M.

"Some Problems of the Geometry of the Magnetic Circuits in Magnetoelastic Force Converters"

Tr. Mosk. In-t Elektron. Mashinostroyeniya [Works of Moscow Institute of Electronic Machine Building], No 7, 1969, pp 337-341 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, 1970, Abstract No 7A101, by V. M.

Translation: The relationship is established between the magnetic flux and geometric dimensions of a magnetoelastic force converter, providing an output signal of zero when no external force is applied to the magnetic circuit. The magnetic circuit is in the shape of a parallelepiped with four symmetrically placed apertures containing the windings. Two illustrations.

1/1

Acc. Nr: **AP0044667**

Ref. Code:

UR 0497

PRIMARY SOURCE: **Klinicheskaya Meditsina, 1970, Vol 48,**
Nr 2 , pp 57-61

**COMPLICATIONS IN PATIENTS SUFFERING FROM AURICULAR
FIBRILLATION SUBJECTED TO CARDIOVERSION**

V. M. Panchenko

Summary

The paper carries information on the possible complications after cardioversion which is based on observations over 100 patients suffering from auricular fibrillation. Several forms of possible complications are singled out. The first form of complications occurs in connection with the use of a number of drugs in the preparatory period, the second — is associated with the employment of anesthesia, the third — with the application of an electric discharge on the heart where the greatest hazard is the development of ventricular fibrillation, the fourth — occurs in restoration of the sinus rhythm (normalization, embolism, pulmonary edema, etc.), the fifth — is associated with the conduction of postdefibrillation antiarrhythmic therapy.

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REEL/FRAME
19771398

DI 02

USSR

BELOUSOV, B. N., LUKASHENKO, A. N., and PANCHENKOV, A. N.

"Lifting Surface in Nonstationary Flow Near the Screen"

Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb.
(Aircraft Construction and Equipment of the Air Fleet — Republic Inter-
departmental Collection of Scientific and Technical Works), 1970, vyp. 18,
pp 3-11 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B369 by V. I.
Kholyavko)

Translation: By the acceleration potential method the authors consider the general solution of the linearized problem of the harmonic oscillation of a thin slightly curved lifting surface in a restricted fluid flow. The solution is presented in the form of three terms, two of which (solution involving the presence of a velocity distribution discontinuity on the lifting surface, and solution describing inertial motion) are regular, and one is singular. For a high-aspect-ratio wing ($\lambda \rightarrow \infty$), with application of the Prandtl scheme and approximation of vortex intensity along the chord by an expression taken from the plane solution the nonstationary problem reduces to two one-dimensional integral equations. An example is given of the calculation of nonstationary wing motion for the case of elliptic span load

1/2

USSR

BELOUSOV, B. N., et al., Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb. (Aircraft Construction and Equipment of the Air Fleet -- Republic Interdepartmental Collection of Scientific and Technical Works), 1970, vyp. 18, pp 3-11 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B369 by V. I. Kholyavko)

distribution. In comparison with classical theory, an additional term of order λ^{-1} is obtained in the stationary part of the lift coefficient for a nonplanar wing. It is assumed that this term takes into account the influence of aspect ratio on zero-lift angle.

2/2

- 10 -

USSR

PANCHENKOV, A. N., VIGMAN, B. A.

"Problems of Formation of a Theory of Functioning and Optimal Control of
Experimental Design Offices Based on the Theory of Large Systems"

Prikl. Matematika. Vyp 3 [Applied Mathematics, No 3 -- Collection of Works],
Irkutsk, 1971, pp 4-49, (Translated from Referativnyy Zhurnal, Kibernetika,
No 3, 1972, Abstract No 3 V465).

NO ABSTRACT.

USSR

UDC: 51:330.115

PANCHENKOV, A. N.

"Asymptotic Methods in the Theory of Systems"

Metody upr. bol'shimi sistemami. T. 1 (Methods of Controlling Large Systems. Vol 1), Irkutsk, 1970, pp 104-147 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V526)

[No abstract]

1/1

USSR

UDC 677.4.54-171:539.16.04

SLATINA, S. D., KIRILENKO, YU. K., VOL'F, L. A., MEOS, A. I., SHAPIRO, YE. I.,
VISHNYAKOVA, T. P., PANCHENKOV, G. M., VLASOVA, I. D., KAUCHANSKIY, D. A.,
and MARHAUSOV, V. A.

"Radiation Resistant Polyvinylalcohol Fibers Containing Ferrocene"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 786-787

Abstract: Polyvinylalcohol fibers containing ferrocene were obtained by impregnating a freshly formed or thermostabilized PVA-fibers with 5-18% solution of 1,1'-diacetylferrocenylformaldehyde resin [1,1'-DAFF] in acetone. After the impregnation the material was heated to 140-160°C for 10-20 min, resulting in formation of chemical bonds between the hydroxyl groups of the PVA-fiber and the methylal group of 1,1'-DAFF resin (14-18% of chemically bound 1,1'-DAFF resin). The 1,1'-DAFF resin was obtained by polycondensation of diacetylferrocene with formaldehyde in ethanol at 50°C and in presence of sodium carbonate. The modified fiber was subjected to γ -radiation in presence of air oxygen. The strength and the elastic indicators of the ferrocene containing material were superior in comparison to the starting material.

1/1

- 75 -

USSR

UDC 677.4.54-171.539.16.04

STARKOVA, A. N., KIRILENKO, YU. K., SHAPIRO, YE. I., YEGS, A. I., VOL'F, L. A., VISHNYAKOVA, T. P., VLASOVA, I. D., PANCHENKOV, G. M., and KAUCHANSKIY, D. A.

"Radiation Resistant Polyamide Fiber"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 785-786

Abstract: An attempt was made to increase the resistance of polyamide fiber towards γ -radiation by treating it with ferrocene containing compounds. Caprone cord fiber was treated with ferrocenealdehyde (FCA) under following conditions: FCA - 3%; catalyst - 6.5% H_3PO_4 ; temperature - 75°C; duration - 2 hrs; solvent - ethanol. The fiber obtained was more resistant to thermo-oxidative destruction than the starting material; after heating for 2 hrs at 200°, the modified fiber retained 60-70% of the initial strength, while the starting material dropped down to 25%. The modified fiber was found to possess high adhesiveness towards the resin; it can be used in production of hoses, conveyor belts, driving belts, etc, performing under radiation.

1/1

Combustion

USSR

UDC 541.124/123

PANKHURKOV, G. M., MALYSHEV, V. V., MAKARENKO, V. V., GRIGOR'YEV, V. A., and
PUSTYREV, O. G.

"Flash Point Concentration Limits of Hydrocarbons and Hydrocarbon Fuels"

Moscow, Zhurnal Fizicheskoy Khimii, Vol. 45, No 2, Feb 72, pp 374-376

Abstract: Concentration range of a cold flame flash point of various hydrocarbons and hydrocarbon fuels determined in containers made of different materials, changing the temperature and the degree of dilution with an inert gas are described well by a general equation

$$\bar{P} = f(\bar{c})(c_0 - 1)/\bar{c}(\bar{c}_0 - \bar{c})$$

where $\bar{c}_0 = 1/c_0$ and $f(\bar{c})$ is an experimentally determined function.

1/2 015
UNCLASSIFIED
TITLE--ISOMERIZATION OF N BUTENES AND N BUTANE IN THE PRESENCE OF GROUP
VIII METALS ON ALUMINUM OXIDE -U-
AUTHOR-(03)-PANCHENKOV, G.M., VOLOKOVA, G.S., ZHOROV, YU.M.
COUNTRY OF INFO--USSR
SOURCE--NEFTEKHIMIYA 1970, 10(2), 178-82
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ISOMERIZATION, BUTANE, BUTENE, METAL CATALYST, CATALYST
ACTIVITY, COBALT, NICKEL, RHENIUM, PALLADIUM, PLATINUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/0958
STEP NO--UR/0204/70/010/002/0178/0182
CIRC ACCESSION NO--AP0134676
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134676

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE METALS WERE ACTIVE CATALYSTS FOR CIS TRANS AND DOUBLE BOND ISOMERIZATION. EXCEPTING RH AND PT, THE ACTIVITIES OF THE METALS WERE SIMILAR. THE ACTIVITY OVER THE SKELETON ISOMERIZATION OF OLEFINS INCREASED: CO LESS THAN NI LESS THAN RH LESS THAN FE LESS THAN PD LESS THAN PT. AL SUB2 O SUB3-RH AND PLATFORMING CATALYSTS WERE THE MOST ACTIVE FOR HYDROGENATION. OVER AL SUB2 O SUB3, CO AND AL SUB2 O SUB3, NI AS CATALYSTS, 2 BUTENES WERE CRACKED MORE READILY THAN 1 BUTENE. THE ISOMERIZATION ACTIVITY OF THE CATALYST FOR THE ISOMERIZATION OF N,C SUB4 H SUB10 WAS INDEPENDENT OF THE METAL. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--KINETICS OF THE ISOTOPIIC EXCHANGE OF NITROGEN BETWEEN AMMONIA AND
ITS COMPLEXES WITH ALCOHOLS --U-
AUTHOR--(C2)--KUZNETSOV, A.I., PANCHENKOV, G.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1116-18
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--AMMONIA, NITROGEN ISOTOPE, COMPLEX COMPOUND, REACTION
KINETICS, METHANOL, ETHANOL, BUTANOL, EXCHANGE REACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0009 STEP NO--UK/0057/70/044/004/0116/0118
CIRC ACCESSION NO--AP0132309
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132309

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. THE KINETICS OF THE EXCHANGE OF
PRIME15 N AND PRIME14 N BETWEEN NH SUB3 AND ITS COMPLEXES WITH MECH,
ETOH, PRCH, BUOH, AND C PRIME5 H PRIME11 OH WAS STUDIED AT ROOM TEMP., 1
ATM, AND A NH SUB3 CIRCULATING RATE OF 5-7.1.-MIN. THE EXCHANGE
REACTIONS RUN VERY FAST AND WERE COMPLETED IN 2-5 MIN. THE REACTION
RATE WAS DETD. BY THE RATE OF THE MIXING PROCESSES OF NH SUB3 IN THE GAS
STREAM. THE RESULTS PROVIDE INFORMATION FOR THE BETTER DESIGN OF
COUNTERCURRENT INSTALLATIONS FOR THE SEPN. OF THE N ISOTOPES.
FACILITY: MCK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CHEMICAL SCHEME AND STRUCTURE OF THE MATHEMATICAL DESCRIPTION OF
HYDROCRACKING -U-
AUTHOR--(05)-ZHOROV, YU.M., PANCHENKOV, G.M., TATARINTSEVA, G.M., KUZMIN,
S.T., ZENKOVSKIY, S.M. *P*
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 1-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--MATHEMATIC EXPRESSION, CATALYTIC CRACKING, PETROLEUM
HYDROCRACKING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1951 STEP NO--UR/0318/70/000/005/0001/0003
CIRC ACCESSION NO--AP0133795
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133795

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCHEME BASED ON THE MAIN CHEM. CONVERSIONS OF THE RAW MATERIAL WAS DEVELOPED FOR THE 1 STAGE CRACKING OF VACUUM DISTILLATES, BUT IS WAS CONSIDERED A 2, OR 3 STAGE PROCESS, IF IT TOOK PLACE UNDER MILD OR SEVERE CONDITIONS, RESP. THE WT. COEFFS. OF THE SCHEME WERE CONST. FOR CONST. QUALITY OF THE STOCK. A MATH. DESCRIPTION WAS DEVELOPED FOR AN ADIABATIC REACTOR WITH FIXED CATALYST BED.

UNCLASSIFIED

1/2 022
UNCLASSIFIED
TITLE--DETERMINATION OF THE AVERAGE LIFETIMES OF ADSORBED CESIUM IODIDE
MOLECULES ON A TUNGSTEN SURFACE -U-
AUTHOR--(03)--KOLESNIKOV, B.YA., KOLCHIN, A.M., PANCHENKOV, G.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. TEKH. FIZI1970, 40(4), 868-71
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--TUNGSTEN, CESIUM COMPOUND, IODIDE, ADSORPTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0293
CIRC ACCESSION NO--AP0124052
STEP NO--UR/0057/70/040/004/0868/0371
UNCLASSIFIED

2/2 022

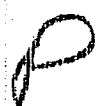
UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124052

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF AN INTERRUPTED MOL. BEAM WAS USED IN CONJUNCTION WITH A MASS ANALYZER TO DET. THE AV. LIFETIME FOR ADSORBED, NEUTRAL GSI MOLS. ON THE SURFACE OF POLYCRYST. W AT 729-856DEGREESK FOR A BEAM OF 1.9×10^{13} MOLS. PER CM PRIME2 SEC. THE RESULTS ARE GIVEN BY THE FORMULA: τ (SEC) EQUALS $1 \times 10^{14} \times \text{PRIME}^{-1} \times \exp(47,500 - RT)$. THE ADSORPTION OF THE MOLS. WAS 2 PHASE IN NATURE. FACILITY: MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SEPARATION OF P XYLENE FROM MIXTURES USING WERNER COMPLEXES -U-
AUTHOR-(02)-PANCHENKOV, G.M., KOROSTELEVA, A.I. 
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 30-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--XYLENE, NICKEL COMPLEX, PYRIDINE, THIOCYANATE, HYDROCARBON
SEPARATION, CHEMICAL PURITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO-----FD70/605012/B09 STEP NO--UR/0318/70/000/005/0030/0033
CIRC ACCESSION NO--AP0140251
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP014G251

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. CONTG. ETPH 13.5, M 49.5, P 21.2, AND O XYLENE 15.8 WT. PERCENT, WAS TREATED WITH NI(4,METHYLPYRIDIE)(SUB4 (SCN) SUB2 DISSOLVED IN 32:56:12 ETHN SUB2,H SUB2 O,AMMONIUM OXALATE TO OBTAIN A CLATHRATE PPT., FROM WHICH WAS OBTAINED P XYLENE OF 96-8PERCENT PURITY. BY REPEATING THE TREATMENT, P XYLENE OF 99.6PERCENT PURITY WAS OBTAINED. THE COMPLEX COULD BE 75-80PERCENT REGENERATED TO OBTAIN A PRODUCT MORE EFFECTIVE THAN THE ORIGINAL COMPLEX.

UNCLASSIFIED

I/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LUMINESCENT CHROMATOGRAPHIC ANALYSIS OF PARAFINIC AND NAPHTHENIC
HYDROCARBONS -U-
AUTHOR--(03)-ZHODOV, YU.M., PANCHENKOV, G.M., SKRIPKINA, N.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(4), 55-6
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--LUMINESCENCE, CHROMATOGRAPHY, ALKANE, NAPHTHENE, CHEMICAL
ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1704 STEP NO--UR/0045/70/015/004/0055/0056
CIRC ACCESSION NO--AP0125325
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125325

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE LUMINESCENT CHROMATOGRAPHIC ANAL. METHOD WAS COMBINED WITH THE ANILINE POINT METHOD FOR THE SEPARATION AND DETECTION OF PARAFFINIC AND NAPHTHENIC HYDROCARBONS, DETECTED SIMULTANEOUSLY OTHER COMPONENTS OF THE MIXTURE. AROMATIC HYDROCARBONS WERE DETECTED BY USING 1,3-DIPHENYLBUTADIENE AS INDICATOR. THE MEAN SQUARE DETECTION ERROR WAS 1.5 PERCENT.

FACILITY: NMINKHGP, MOSCOW, USSR.

UNCLASSIFIED

1/2 021
TITLE--REGENERATION OF ALUMINA NICKEL TUNGSTEN SULFIDE HYDROGENATION
CATALYSTS -U-
AUTHOR--(03)-VALITOV, N.KH., PANCHENKOV, G.M., BALANDINA, K.L.
COUNTRY OF INFO--USSR
SOURCE--NEFIEPERERAB. NEFTEKHIM. MOSCOW, 1970, (3), 8-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CATALYST REGENERATION, CATALYTIC HYDROGENATION, NICKEL
SULFIDE, TUNGSTEN COMPOUND, SULFIDE CATALYST, COKE, GRAPHITE, PETROLEUM
FRACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0644
STEP NO--UR/0318/70/000/003/0008/0009
CIRC ACCESSION NO--AP0119556
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REGENERATION OF A (NIS-WS SUB2)-AL SUB2 O SUB3 HYDROGENATION CATALYST BY BURNING OFF THE COKE AND EXCESS S, REMOVING SURFACE LAYERS OF FE, V, AND AS COMPOS. IN A BALL MILL, GRINDING THE PELLETS TO 315 MU PARTICLE SIZE, MIXING THE RESULTING POWDER WITH GRAPHITE, PELLETIZING THE MIXT., AND SULFIDIZING IT TO 7PERCENT S CONTENT RESTORED ALMOST ALL OF THE ORIGINAL ACTIVITY. BY HYDROGENATING A STRAIGHT DISTN. 153-253DEGREES KEROSENE FRACTION INTRODUCED AT 140 ML-HR WITH 70 L. H-HR ON 94 G OF FRESH AND REGENERATED CATALYSTS, RESP., AT 300 PLUS OR MINUS 10 ATM AND 360 PLUS OR MINUS 1.5DEGREES, THE TOTAL S CONTENT WAS REDUCED FROM 0.63 (20PERCENT SULFURIZING) TO 0.022 AND 0.026PERCENT (3 AND 4PERCENT SULFURIZING). FACILITY: MINKHGP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--DYNAMICS OF ADSORPTION IN THE PRESENCE OF ADSORPTION AND
EQUILIBRIUM DIFFUSION KINETICS AT PHASE BOUNDARIES CHARACTERIZED BY A
AUTHOR--(03)-PANCHENKOV, G.M., TSABEK, L.K., ROZEN, I.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 233-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, PHASE EQUILIBRIUM, ISOTHERM, CHROMATOGRAPHY,
LAPLACE TRANSFORM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1424

STEP NO--UR/0076/70/044/001/0233/0236

CIRC ACCESSION NO--AP0116871

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116871

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GENERAL EQUATION DESCRIBING THE DYNAMICS OF ADSORPTION IN A CHROMATOGRAPHIC COLUMN (G. M. PANCHENKOV, ET AL., 1969) WAS SOLVED BY THE INTEGRAL LAPLACE TRANSFORMATION. THE SOLN. OF THIS EQUATION IS BASED ON THE ASSUMPTION THAT THE ADSORPTION ISOTHERM IS LINEAR AT PHASE BOUNDARIES. THE NUMERICAL SOLN. OF THE EQUATION IS POSSIBLE BY MEANS OF SUITABLE COMPUTERS. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV, PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 013
TITLE--MOVEMENT OF CHARGED WATER DROPLETS IN A HOMOGENEOUS D.C. ELECTRIC
FIELD -U-
AUTHOR--(03)--PANCHENKOV, G.M., VINOGRADOV, V.M., PAPKO, V.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(2), 34-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--SODIUM CHLORIDE, ELECTRIC FIELD, WATER, LIQUID DROP MODEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0929
CIRC ACCESSION NO--AP0107458
STEP NO--UR/0065/70/015/002/0034/0036
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107458

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOVEMENT OF CHARGED WATER DROPLETS SUSPENDED IN A HYDROCARBON MEDIUM IN A D.C. ELEC. FIELD, AND THE EFFECT OF SALTS DISSOLVED IN WATER ON THE MOVEMENT WAS INVESTIGATED. A COMPARISON OF EXPTL. DATA FOR THE RATE OF MOVEMENT OF CHARGE DROPLETS OF A 0.4760 N NACL SOLN. WITH THE CALCD. RATE, AS INFLUENCED BY THE RADIUS OF THE DROPLET, IS PRESENTED.

UNCLASSIFIED

1/2 044

UNCLASSIFIED

PROCESSING DATE--250670

TITLE--DEVICE WITH A MAGNETOELECTRIC DRIVE MECHANISM FOR STUDYING THE
RHEOLOGICAL PROPERTIES OF INTERPHASE FILMS AT THE WATER PETROLEUM
AUTHOR--(02)-MANSUROV, R.I., PANCHENKOV, G.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHLEB. ZAVED, NEFT GAS 1970, 13(1), 92-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--TEST INSTRUMENTATION, RHEOLOGIC PROPERTY, SURFACE PROPERTY,
WATER, PETROLEUM, OPTIC PROPERTY, SHEAR STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/2062

STEP NO--UR/0152/70/013/001/0092/0096

CIRC ACCESSION NO--AT0122291

UNCLASSIFIED

2/2 044

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0122291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHEAR STRENGTH OF THE INTERPHASE FILMS WAS TRANSMITTED BY MEANS OF A THIN FILAMENT, WHOSE DISPLACEMENT CORRESPONDED TO THE DEFORMATION OF THE FILM AND WAS MEASURED WITH AN OPTICAL SYSTEM. THE ADVANTAGES OF THE DEVICE WERE ITS SIMPLICITY AND PRECISION TO MAINTAIN A CONST. SHEAR STRENGTH, NO SENSITIVITY TO THE EFFECTS OF THE PETROLEUM MEDIUM, LOW VIBRATIONS, AND VERY BRIGHT DETN. RANGE, ALLOWING THE BEHAVIOR OF THE FILMS TO INSTANTANEOUS EFFECTS OF LOADS TO BE STUDIED. THE RHEOLOGICAL DEFORMATION CURVES COULD BE OBTAINED WITH A PRECISION OF 2-4PERCENT.

FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.316.825.4:678.762

PAUSHKIN, YA. M., PANCHENKOV, G. M., CHERNYKH, V. G., LUNIN, A. F., KAUSHANSKIY, D. A., DMITRIYEV, V. A., and MARKOVICH, V. B., Moscow Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin, Moscow, Ministry of Higher Education USSR

"Effect During the Process of Irradiation of Ionizing Radiation on Polymers With Conjugated Bonds"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 835-837

Abstract: The effects of gamma-rays from ^{60}Co at a dosage rate of 1.2-1.3 Mrad/hr on the electrophysical properties of the organic semiconductors polyacetonitrile (I), paracyanogen (II), polyphenylcyanamide (III), polydiacetyl (IV), polybutylcyanamide (V), and polybutylcyanate (VI), specifically on their electrical resistance, were studied during the process of irradiation. For I, II, IV, and VI with a low ohmic resistance that were prepared at 450-500°C, irradiation at doses $\leq 5 \times 10^9$ rad did not result in any changes of resistance. Irradiation of V, which also had a low ohmic resistance, produced a slow rise in resistance in the dose range of 0-110

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USSR

PAUSHKIN, YA. M., et al, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 835-837

Mrad and an abrupt rise at 110-140 Mrad. In the case of VI with a high ohmic resistance, which was prepared at 350°, ionizing radiation in the dose range from 0 to 170-200 Mrad produced further polymerization and cross-linking, which were reflected in a decrease of the resistance, while doses > 200 Mrad decomposed the polymer. The results showed that irradiation at doses up to 5×10^9 rad of I, II, IV, and VI with a low ohmic resistance did not change the physico-chemical and electrophysical properties of these polymers - i.e., they are suitable for use in radioelectronic devices operating under conditions of exposure to ionizing radiation.

2/2

- 94 -

USSR

UDC: 539.1.074

GRAMMATIKATI, V. S., GRINEV, M. P., YERSHOVA, Z. F., KOZLOV, L. L.,
LITVINOVA, T. G., MIKHAYLOV, L. M., MOLIN, A. A., PANCHENKOV, G. M.

"Color Indicators for Visual Evaluation of Dose During Radiation Sterilization"

Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh [Dosimetry and Radiation Processes in Dosimetric Systems -- Collection of Works], Tashkent, Fan Press, 1972, pp 113-118 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 3, 1973, Abstract No 3.32.1403), from the resume.

Translation: It is suggested that a plasticized PVC film containing an acid-sensitive dye be used as a color dose indicator for the 0.1-5.0 Mrad range. The sensitivity of indicators to radiation as a function of film composition and dye used is studied. Color dose indicators are calibrated using the ferrosulfate method and calorimetry. A method is suggested for instrumental testing of changes in the color of indicators using spectrophotometry of irradiated specimens, allowing doses to be measured with errors of $\pm 10-12\%$. Practical recommendations are presented for the use of color dose indicators to check radiation sterilization. 2 figures, 1 biblio. ref.

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172 033 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--POTASSIUM AND CESIUM HYDROXIDES STUDIED BY AN ELECTRON IMPACT
METHOD. ENERGIES OF DISSOCIATION OF POTASSIUM HYDROXIDE AND CESIUM
AUTHOR--(03)-GOROKHOV, L.N., GUSAROV, A.V., PANCHENKOV, I.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1) 269-70
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--MASS SPECTRUM, ELECTRON BOMBARDMENT, THERMAL EFFECT,
IONIZATION POTENTIAL, HEAT OF DISSOCIATION, CESIUM COMPOUND, POTASSIUM
COMPOUND, HYDROXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/0306 STEP NO--UR/0076/70/044/001/0269/0270
CIRC ACCESSION NO--AP0053291
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MASS SPECTROMETRIC ELECTRON IMPACT METHOD WAS USED TO REFINE THE DISSOCN. ENERGIES OF KOH AND CSOH. THRESHOLD POTENTIALS LEADING TO IONS FROM THE REACTIONS K YIELDS K PRIME POSITIVE, KOH YIELDS K PRIME POSITIVE, KOH YIELDS KOH PRIME POSITIVE, K SUB2 (OH) SUB2 YIELDS K SUB2 OH PRIME POSITIVE, K SUB2(OH SUB2) YIELDS K SUB2 O PRIME POSITIVE, CSOH YIELDS CS PRIME POSITIVE, AND CSOH YIELDS CSOH PRIME POSITIVE WERE 4.3, 7.8, 7.5, 7.8, 7.6, 7.6, AND 7.4 EV, RESP. THE DISSOCN. ENERGIES OF KOH AND CSOH WERE 80 AND 86 KCAL-MOLE, RESP. THE DIFFERENCE BETWEEN THOSE 2 VALUES WAS ALSO CONFIRMED BY MEASUREMENT OF THE EQUIL. CONST. FOR THE REACTION CS PLUS KOH YIELDS K PLUS CSOH AT 795-1044 DEGREES; A VALUE OF 7.6 KCAL-MOLE WAS OBTAINED. THE IONIZATION POTENTIAL OF K SUB2 O IS 4.6 EV AND THE TEMP. OF ATOMIZATION OF CS SUB2 O IS 130 KCAL-MOLE.

UNCLASSIFIED

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USSR

UDC 621.385.64

LOMAKIN, V. M., PANCHENKOV, L. V.

"On Self-Excitation of a Pulse Magnetron With Small Values of the Initial Emission of the Cathode (Cold Self-Excitation)"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 2, pp 33-42
(from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A128)

Translation: The results are described of an experimental investigation of self-excitation of power oscillations in a pulsed magnetron with a non-hot cathode. A qualitative explanation is given for the phenomenon observed. Self-excitation of the magnetron takes place because of an accumulation of electrons in the area of interaction under the influence of a variable which is determined by the form of the plate voltage at the magnetron. 2 ref. Summary

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172 016
UNCLASSIFIED
TITLE--HARDENING EPOXY RESINS -U-
AUTHOR--(02)--DROBCHENKO, YE.V., PANCHENKO, N.A.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,876
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--EPOXY RESIN, CHEMICAL PATENT, PHENOL, HARDNESS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--3002/1463
CIRC ACCESSION NO--AA0128862
STEP NO--UK/0482/70/000/000/0000/0000
UNCLASSIFIED

2/2 016
CIRC ACCESSION NO--AA0128862

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPOXY RESINS ARE HARDENED WITH
2,4,6,TRIPERIDINOMETHYLPHENOL.

UNCLASSIFIED

USSR

UDC 577.1:612.12.015

ROGATINA, L. N., KARAGODINA, A. M., and PANCHENKO, V. A.

"Urine Preservation in a System of Water Recovery From Urine"

V sb. Probl. kosmich. biol. (Problems in Space Biology -- Collection of Works), Vol 16, Moscow, "Nauka" (Science), 1971, pp 173-178 Russian) (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 71, Abstract No 19F1536 from summary)

Translation: A study was made of 32 substances and combinations thereof for preservation of urine when stored for two weeks at 18-20°. Five formulas were investigated using apparatus for water recovery from urine in order to ascertain the feasibility of their application for urine preservation in this system. When urine is treated with a preservative, the condensate shows a decline in the amount of ammonia and total content of organic substances as compared with the condensate obtained on the evaporation of urine untreated with a preservative agent. The condensate met the requirements of the All-Union State Standard for drinking water in respect to microorganism content, clarity and odor. Slight additional purification using ion-exchange resins is required in order to obtain water meeting the All-Union State Standard requirements for drinking water in respect to physicochemical indicators.

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USSR

PACHEPSKIY, Ya. A., Moscow

UDC 534.222.2:539.374

"On the Structure of Shock Waves in Elastic-Plastic Media"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 37, No 2, Mar-Apr 73, pp 300-305

Abstract: A system of equations for the structure of a shock wave in an elastic-plastic medium is examined. It is assumed that the volume deformation occurs elastically, while the equations of the shift deformation are a combination of Hooke's law in differential form and the law of plastic flow with a limit of plasticity which is a non-decreasing function of pressure. The assumption that the properties of thermodynamics functions for reversible processes can be applied to the case of irreversible processes permits a number of conclusions about solutions of the equations of structure and the characteristics of singular points of these equations. Conditions which must be satisfied by the thermodynamic functions of the material, its initial and final states, in order for the structure of the shock wave to exist, are determined. For a medium with a spherical stress tensor a detailed analysis of the structure of the shock front is found in Galin, Dokl. AN SSSR, Vol 127, No 1, 1959. The treatment in this reference is naturally generalized to the case in which stress is a single-valued function of deformation during the single-axis deformation of solid bodies.

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AA0051888

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-70

UR 0482

244029

LUBRICATOR FOR DIESEL LOCOMOTIVE BAL-
ANCE SPINDLES consisting of a clamp

with a handle 1 with a rubber seal 6 in the aper-
ture 2 of channel 3, connected to a lubricant com-
pressor by means of flexible hose 4. The lubrica-
tor differs in that the clamp is made horseshoe-
shaped with a hinged handle so that it can be held
firmly against the balance spindle's aperture 5,
compressing seal 6.

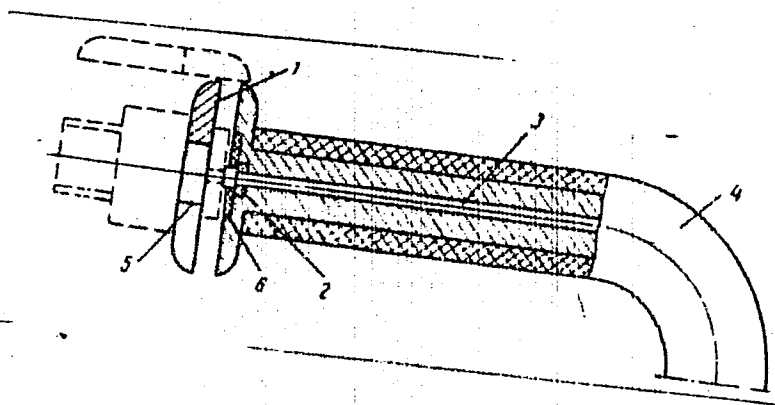
22.9.67 as 1187105/25-8 P.M. PALAMARCHUK & V.V.
PANCHEV (30.9.69) Bul. 17/14.6.69. Class 27c.
Int. Cl. F 16n.

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AA0051888



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19820360

AA0051900

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2.70

UR 0482

244028

DIESEL LOCOMOTIVE BALANCE SPINDLE LUB-
RICATION METHOD by means of applying
lubricant under pressure, differs in that a nipple
is first attached to the spindle with a flexible
sealed joint, and the lubricant is then applied
under pressure. This improves the reliability and
speed of lubrication. 22.9.67 as 1187105/25-8
P.M. PALAMARCHUK & V.V. PANCHEV (1.10.69) Bul. 17/
14.5.69. Class 47e, Int. Cl. F 16n.

19820383

USSR

UDC 681.326

ZBARYSHEVSKIY, V. M., MARCHUK, A. A., NESTERENKO, B. B., and PANCHISHIN, V. I.
Institute of Mathematics, Academy of Sciences Ukrainian SSR

"Device for Controlling the Structure of a Computer Medium"

USSR Authors' Certificate No 312273, Cl. G 06 g 7/46, filed 7 Apr 70,
published 7 Oct 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 5, May 72, Abstract No 5B221P)

Translation: The invention has to do with computer devices used to control the structure of an optron analog network in the solution of partial differential equations. Special-purpose devices for solving partial differential equations by the modeling method are well known: for example, the "USM-1" and the "Vega," which use a network of resistors as the analog medium. However, the USM-1 network model does not permit control of the network structure at sufficient speed: i.e., changing of the resistances of the resistors according to the necessary law. The automated Vega network model permits the resistances of the resistors constituting the networks to be changed automatically according to a given program as an equation is solved. This is done by connecting to the network a resonator of the requisite rating from an available set by means of an electromagnetic relay. Such a principle of controlling the structure of

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"USSR"

ZBARYSHEVSKIY, V. M., et al., USSR Authors' Certificate No 312273

the medium makes the entire device cumbersome and requires the presence of a large number of precision resistors with various ratings. The purpose of the invention is to develop a device for electronically setting and controlling the structure of a computer medium (analog network) that is based on optrons. The proposed device makes it possible to set the resistance values of the photoresistors of the optrons automatically according to a given program and to change them according to the requisite law during the solution of an equation by changing the filament current of the optron light sources according to the corresponding law.

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USSR

UDC: 681.333

PANCHISHIN, V. I., Institute of Mathematics, Academy of Sciences of the
Ukrainian SSR

"An Integrator for Modeling Differential Equations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 8, Mar 72, Author's Certificate No 330460, Division G, filed 5 Oct 70,
published 24 Feb 72, p 156

Translation: This Author's Certificate introduces an integrator for modeling differential equations of elliptical and parabolic type. The device contains a vacuum stand with electrodes which accommodates a model made of electrically conductive paper. The integrator also contains lines for setting up boundary conditions, a voltage divider, and an automatic digital measuring device, as well as resistors, capacitors, and a power supply. As a distinguishing feature of the patent, speed and accuracy of analysis are improved, and the class of problems which can be solved is extended by using electronic stabilized voltage dividers, an electronic time-mark generator, and gerkons connected to each electrode of the vacuum stand in parallel with a resistor and capacitor. The gerkon excitation coils are connected

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USSR

PANCHISHIN, V. I., USSR Author's Certificate No 330460

to the electronic time-mark generator, whose outputs are connected to the automatic digital measuring device. The resistors are connected to the voltage divider, which is connected, in turn, to the source of supply. One of the outputs of the source of supply is connected to the inputs of the electronic stabilized voltage dividers, and the outputs of the electronic stabilized voltage dividers are connected to the lines for setting up variables of the boundary conditions.

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USSR

UDC 532.5:621.22

KOVAL', V. P., KOZHEVNIKOV, S. N., MANZIY, V. S., PANCHISHIN, V. I.
"Derivation of the Equations for Non-Steady-State Motion of an Aircraft Turbo-
starter With a Hydrodynamic Clutch"

v sb. Nekotor. vopr. prikl. mat. Vyp. 5 (Certain Problems of Applied Mathematics.
No. 5 -- Collection of Works), Kiev, 1971, pp 288-297 (from RZh-Mekhanika, No 12,
Dec 71, Abstract No 12B998)

Translation: It is noted that in transfer processes in a drive with a hydraulic clutch there occur oscillations in the moment and velocity of the drive shaft which make the process of acceleration of the machine difficult. The equations of motion of the drive with a hydraulic clutch and transfer regimes are derived on the basis of Bernoulli's equation for non-steady-state motion of a liquid. This equation is convenient in the analysis of the rise of unstable operation of the drive. In solving this equation the circulation component of the moment transmitted by the clutch is determined by the Euler equation for a turbine wheel. It is emphasized that one can find the laws for the change in angular velocities of the rotation of the driving and driven shafts of the hydraulic clutch in non-steady-state motion. The startup of a turbojet engine is considered as an example of the analysis. B. N. Chumachenko.

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USSR

PANCHISHIN, V. I.

UDC: 681.333.

"Automating the Solutions to Problems in Mathematical Physics
Describable by Partial Differential Equations"

Kiev, Matematicheskaya Fizika, No 11, 1972, pp 112-116

Abstract: Discussing various methods of automating the solution to mathematical physics problems involving the solution of partial differential equations, the author finds that a fundamental obstacle in the way of using a combination of grid models and the digital computer is mechanical -- as in the USM-1 -- or electromechanical -- as in the "Saturn" complex -- control of the grid parameters and its inability to accord with the speed of the digital computer. To eliminate this difficulty, the author proposed in an earlier paper (Elektrointegrator dlya resheniya zadach teorii polya -- Electrical Integrator for Solving Problems in Field Theory -- Author's Certificate No 272680, Byulleten' izobreteniy i tovarnykh znakov, 19, 1970) a type of grid whose construction is varied by electronic control. This method is fully explained in the present paper, and an analysis of the integrator described

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USSR

PANCHISHIN, V. I., Matematicheskaya fizika, No 11, 1972, pp 112-116

UDC: 681.333

in the patent is given, together with the functional diagram of the device designed to solve two- and three-dimensional problems. The method of solving boundary value problems with such an integrator is explained.

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USSR

PANCHISHIN, V. I., DZYUBENKO, P. S., Institute of Mathematics, Academy of Sciences of the UkrSSR

UDC 681.332.6

"A Stand for Modeling Differential Equations"

USSR Author's Certificate No 321827, filed 28 Sep 70, published 31 Jan 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9,
Sep 72, Abstract No 9B450 P)

Translation: A design is presented for a system to improve contact between contacts and electrically conductive paper and to maintain contact when studying problems in partial derivatives by using electrically conductive paper. The paper is pressed against the contacts by evacuating the air from a cavity beneath the paper. One illustration. I. V.

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USSR

UDC 632.952:635.64

KRASNOSHCHKOVA, T. V. (deceased), and PANCHULIDZE, L. T., Georgian Branch
of the All Union Scientific Research Institute of Pharmacology

"Effectiveness of Some Fungicides in Controlling Tomato Phytophthora"
Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 43-44

Abstract: A study carried out in southern region of Kolchidskaya Plain
showed that the fungicides polycarbacin, editon, euparen and antracol used
at a 0.4% concentration were as effective against tomato phytophthora as
cynab. The material was sprayed at a rate of 1000 l/hectare. A triple
spraying of the plants with these fungicides during the season increased
appreciably the marketable yield of the tomatoes.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--LOW TEMPERATURE RADIOLYSIS OF ALIPHATIC SULFIDES -U-
AUTHOR--(C4)--NANOBAASHVILI, YE.M., PANCHVIDZE, M.V., DAPKVIASHVILI, A.G.,
KHIDESHILI, G.I.
COUNTRY OF INFO--USSR
SOURCE--SCBESHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 81-4
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--RADIOLYSIS, SULFIDE, FREE RADICAL, ALPHA RADIATION, BETA
RADIATION, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1233

CIRC ACCESSION NO--AP0128649

STEP NO--UR/0251/70/057/001/0081/0084

UNCLASSIFIED

2/2 G14
CIRC ACCESSION NU--AP0128649 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIOLYSIS AT 77DEGREESK. OF (C
SUBN H SUB2N PLUS 1) SUB2 S (N EQUALS 1, 2, 3, 4, 5, 7, 10, AND 12,
RESP.) RESULTS IN ABSTRACTION OF ALPHA OR BETA-H ATOMS. THE RADICAL
YIELD INCREASES CURVILINEARLY WITH N.
KHIM. ELEKTROKHIM., TBILISI, USSR. PROCESSING DATE--20NOV70
FACILITY: INST. NEORG.

UNCLASSIFIED

USSR

UDC: 621.396.622

PANENKO, V. A.

"Some Problems of Investigating Periodic Multiple-Frequency Modes in Parametric Frequency Dividers With Coefficient of Three"

Sb. nauchn. tr. Vladimir. politekhn. in-ta (Collected Scientific Works of Vladimir Polytechnical Institute), 1970, vyp. 9, pp 78-85 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D325)

Translation: The article is a further investigation (see RZh-Radiotekhnika, 1969, 5D277) of solutions of a nonlinear system of equations with gyroscopic terms set up for the coefficients of the fundamental subharmonic solutions in Cartesian coordinates. The stability of the solutions of the system is analyzed as a function of detuning between tank circuits of the divider. The author proposes the possibility of practical utilization of the stable multiple-frequency mode of operation in frequency dividers with a high division coefficient. A. K.

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USSR

UDC 538.4:621.362

KUZNETSOVA, T. D., LEVITAN, Yu. S., MURAV'YEV, Ye. V., PANEVIN, I. G.

"Laminar Magnetohydrodynamic Boundary Layer on a Current-Conducting Surface in the Presence of Lateral Velocity Components and Bulk Retardation Forces"

Magnitnaya Gidrodinamika (Magnetohydrodynamics), No 4, 1971, pp 36-42

Abstract: A study is made of stationary laminar flow of an incompressible liquid with constant electroconductivity and viscosity in a cylindrical coaxial channel with solid electrodes located in an external magnetic field that has both tangential and longitudinal components. The Hall constant and the magnetic Reynolds number are small. Due to axial symmetry, the electric field vector has only longitudinal and transverse components. Using Ohm's law and continuity, impulse, and Maxwell's equations for the external electrical and magnetic fields, the authors show that in a given axial plane the flow is dependent on the varying lateral velocity component, inasmuch as the radial pressure gradient varies along the length of the channel. Also, the longitudinal

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USSR

KUZNETSOVA, T. D. et al, Magnitnaya Gidrodinamika, No 4, 1971, pp 36-42

dinal gradient varies across the channel radius. Under given conditions a meridian vortex develops with a zone of reverse flow near the central electrode. Radial variations in the tangential magnetic field and radial current flux also affect the flow.

The development of a boundary layer in the coaxial channel with rotating flow is simplified to the consideration of a flow in a plane slit-type channel with a lateral velocity component. Assuming a short channel and a large Reynolds number, the authors reduce the problem to a boundary layer approximation, which permits calculation of the flow parameters in the center and in the boundary layer. Fluid injection through the walls is assumed to be weak, and only lateral velocity interaction with the longitudinal magnetic field is treated. The assumptions and simplifications yield simple equations for the laminar boundary layer that describe the skewed flow of the electroconductive liquid on a current-carrying plate.

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USSR

KUZNETSOVA, T. D. et al, Magnitnaya Gidrodinamika, No 4, 1971,
pp 36-42

Self-similar transformations and automodeling techniques fail to hold for fluid injection through the wall, and consequently the Runge-Kutta method is used, with numerical calculation carried out on a BESM-2M digital computer. Results are shown in graphic form by families of curves for the lateral velocity profile. The similarity to flows with retardation is noted. The difference is that when the transverse velocity gradient reaches zero, the main flow separates from the wall and reverse flow is observed, but the longitudinal velocity profile is not affected. Flow retardation and separation from the wall are found to be functions of transpiration rate.

The authors thank A. V. Gubarev for valuable discussions. Orig. art. has 8 figs. and 8 refs.

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USSR

SGALL, P., PANEVOVA, Ya.

"Basic Features of Semantic Enscription of Statements and its Formal Structure"

Nauch. Tekhn. Inform. Sb. Vses. In-t Nauch. i Tekhn. Inform. [Scientific and Technical Information, Collection of All-Union Institute for Scientific and Technical Information], 1972, Series 2, No 11, pp37-40 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V750, by the authors).

Translation: The basic features of a mathematical model of language developed at the Laboratory for Algebraic Linguistics (of Karl University, Prague) are described, and a review is presented of works thematically related to this model.

1/1

USSR

UDC 539.374

PANFEROV, V. M., ISMAGILOV, R. KH., IL'IN, L. M., KOROL', YE. Z., TYURIN, V. F.
"Deformation of a Solid State in the Case of Complex Loading where the Major
Axes of the Stress and Strain Tensors Remain Stationary"

Nauch. tr. In-t mekh. Mosk. un-ta (Scientific Works of the Mechanics Institute
of Moscow University), 1971, No 8, pp 5-21 (from RZh-Mekhanika, No 11, Nov 71,
Abstract No 11V365)

Translation: A version of plasticity theory is proposed which is adapted for
the description of the stressed and strained states of a solid state during
small elastic-plastic flows in the case where the major stress and strain axes
are stationary; the theory is based on the tensor-line relation between the
deviators of the stresses, strains and deformation rates. A description of the
tested device built at the Mechanics Institute of Moscow State University which
permits programmed loading of tubular test pieces under an axial force and
internal pressure is presented. Results are presented from experiments performed
on this device to check the hypotheses assumed in the proposed version of
plasticity theory.

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USSR

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UDC 549.212+620.17

PANFEROV, V. M., TARABANOV, A. S., GRUNIN, L. P., and BOBKOVSKIY, V. N.

"Mechanical Properties of Silicized Graphite"

Moscow, Khimiya Tverdogo Topliva, No 4, 1970, pp 147-148

Abstract: A study was made of certain mechanical properties of silicized graphite prepared from dense graphite as starting material. This material had apparent specific gravity of 1.89 g/cm^3 , true specific gravity of 2.10 g/cm^3 , and porosity of 9.8%. Specimens for silicizing were cut along graphite billet molding axis. In silicized graphite coarse pores with equivalent radii greater than $6 \cdot 10^4 \text{ \AA}$ were filled with silicon and silicon carbide. The resulting silicized graphite had the following characteristics: density 2.15 g/cm^3 , porosity 3%, SiC content 13-15%, and Si content 1.5-2.3%. The experimental study of mechanical properties was performed on a unique stand developed by the strength department of the Scientific Research Institute of Mechanics at Moscow State University at 20, 600, 1100, 1450, 1650, and 1950° under monoaxial extension conditions. Heating from 20 to 1650° at the rate of 80°/min, exposure for 10 min, and cooling at 1100° at the rate of 280°/min was carried out with a programmed unit. It was found that the test material subjected to preliminary heat rolling became "embrittled." Its maximum failure deformation was lowered, strength was reduced, and the material's modulus of elasticity rose.

PANFEROV, V. N.

GENERAL AND DIFFERENTIAL RECOGNITION OF PICTURES OF
HUMAN FACES AND OBJECTS

SO. SPES 53103

12 May 71

V. N. Panferov

(Psychology)

SP 21-33

The problem of recognition of the human appearance has an important place in the general theory of perception and social psychology. Among components of the appearance the face of a person is the most important source of information on the subject perceived. "In the process of intercourse the majority of people most frequently concentrate their attention on the faces of their partners, and mostly on the eyes, which appear to be the person's apparent center for the subject doing the perceiving. This significance of the face in the process of social intercourse stems from the fact that the most important distance receptors are on the face. And the voice heard by another person emanates from the face. Contraction of facial muscles changes the facial expression and signals the person's frame of mind."

In this research we attempted to disclose how recall of pictures of human faces and objects is carried out in conditions of little available time, and what the dynamics are for different perceptual levels of recall depending upon the category of the object perceived and the length of time it is visible. The following were questions to be answered.

1. What differences exist between perceiving pictures of human faces and objects?
2. What differences exist between perceiving the face in front view and in profile?
3. What differences exist between perceiving the structure of pictures of a face that provide the "complete" structure (front view and profile) and those which provide an "incomplete" structure (upper or lower half of the face)?
4. What differences exist between perception of the upper and the lower half of the face?

In order to understand the theoretical and practical significance of the questions posed here, we must clarify for ourselves B.G. Ananyev's proposal that "the unity of creative and communicational functions of the visual system

Podolnev, A.A., Neostimulye Cheloveka (Stimuli of Human Perception of Humans), 100 Leningrad Order of Lenin State University from A.A. Zhidkov Publishing House, 1965, p. 18.

USSR

UDC 621.382.3

PAVLOV, A.N., PANFEROV, V.P.

"Equivalent Circuit Of Transistor"

Elektron.tekhnika. Nauch.-tekhn.sb. Mikroelektronika (Electronic Technics. Scientific-Technical Collection. Microelectronics), 1971, Issue 5(31), pp 107-114 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B186)

Translation: The equivalent circuit of a transistor is proposed in which the distributed character of the base resistance is taken into account. The circuit can be used during calculations on a computer. Summary.

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PANFEROVA, N. Ye.

VASCULAR TONE IN DIFFERENT PARTS OF THE BODY DURING PROLONGED RESTRICTION OF MUSCULAR ACTIVITY

[Article by N. Ye. Panferova, Moscow, Naucheskaya Biologiya i Meditsina, Russian, Vol 9, No 2, March-April 1972, pp 47-50, submitted for publication 1 September 1970]

UDC 612.14.06:612.74.2

JPRS 56030
18 May 72

Abstract: During a 120-day bedrest experiment four test subjects were examined for arterial tone by determining pulse wave propagation and venous tone by the use of occlusion plethysmography and skin temperature measurements. The above indices recorded for different body areas varied differently. The tone of veins and arteries in the legs, including skin arterioles, increased. The tone of hand and foot arteries remained unchanged. The tone of hand and foot veins decreased. The tone of large vessels of the elastic type, aorta, carotid artery, and arm artery, did not change. It is probably that variation in vascular tone is one of the mechanisms (supplementing endocrine regulation) which is responsible for regulating circulating blood volume during hypodynamia.

The problem of the effect of restriction of muscular activity on the functional state of the human vascular system has not been studied adequately. In examining the genesis of different disorders in the blood circulation system observed during hypodynamia most authors use as a point of departure the hypothesis that in hypodynamia the tone of the arteries and veins is reduced (Dobritsk, et al.; Kocally and Orveling, and others). However, this problem has not been entirely clarified.

The purpose of our study was an investigation of the dynamics of the tone of arteries and veins during prolonged restriction of muscular activity.

Arterial tone was judged from pulse wave propagation velocity and skin temperature. For this purpose we registered the phonocardiogram (C_1) in the

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--IMPROVED METHOD FOR PREPARING A CATALYST FOR THE VAPOR PHASE
SYNTHESIS OF VINYL CHLORIDE -U-
AUTHOR--(05)--PANFILOV, A.A., VASILYEVA, I.B., KAMENKO, B.L., GAVRILCHUK,
N.M., KVARTALNOV, V.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 177-9
DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYTIC ORGANIC SYNTHESIS, VINYL CHLORIDE, MERCURY COMPOUND,
ACTIVATED CARBON, CHLORINATION, ACETYLENE, CATALYST ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1662

STEP NO--UR/0064/70/046/003/0177/0179

CIRC ACCESSION NO--AP0125284

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION ISOTHERM OF HGCL SUB2 FROM AQ. SOLNS. ON ACTIVATED C IS PRACTICALLY LINEAR AND THE HGCL SUB2 CONCN. ON THE C INCREASES FROM 0 TO 17PERCENT WHEN THE INITIAL HGCL SUB2 IN THE SOLN. IS INCREASED FROM 0 TO 5PERCENT (AT 20DEGREES); THE ADSORPTION IS FAIRLY RAPID AND A STEADY STATE IS ESTABLISHED AFTER SIMILAR TO 1 HR. A CATALYST CONTG. 10PERCENT HGCL SUB2 WAS PREPD. BY PASSING A 3PERCENT AQ. SOLN. OF HGCL SUB2 THROUGH A COLUMN PACKED WITH ACTIVATED C, AND DRYING THE PRODUCT IN CONTACT WITH AIR HEATED TO 120DEGREES. IN THE HYDROCHLORINATION OF C SUB2 H SUB2 AT A C SUB2 H SUB2:HCL VOL. RATIO OF 1:1.3 AND 180DEGREES THE ACTIVITY OF THE CATALYST INCREASED GRADUALLY WITH TIME AND THE MAX. ACTIVITY WAS REACHED AFTER 120 DAYS (AT A FLOW RATE OF 1100 VOLS.-HR); THE MAX. ACTIVITY WAS THEN SUSTAINED FOR UP TO 8 MONTHS, AND THE DEGREE OF CONVERSION OF C SUB2 H SUB2 UNDER THOSE CONDITIONS WAS NEARLY 80PERCENT.

UNCLASSIFIED

USSR

UDC 621.317.32+621.317.335.2

ROZHKOV, V. A., PANFILOV, B. A., SVERDLOVA, A. M.

"Measuring the Volt-Capacitive and Transfer Characteristics of Metal-Dielectric-Semiconductor Structures"

Moscow, Pribery i Tekhnika Eksperimenta, No 6, 1971, pp 127-129

Abstract: The volt-capacitive characteristics are used to investigate the electric properties of metal-dielectric-semiconductor (MDS) structures. In a number of cases it is useful to know the time behavior of the capacitance. Accordingly, an all-purpose scheme has been developed for investigating the time behavior of the capacitance $C(t)$ and automatic recording of the volt-capacitive $C(V)$ -characteristics of MDS structures. The proposed device permits: 1) recording of the $C(V)$ -characteristic under equilibrium (quasiequilibrium) conditions by taking measurements with respect to points; 2) recording the $C(V)$ -characteristics on a pen recorder where it is possible to isolate the hysteresis phenomena in the MDS structures; 3) measurement of the instantaneous capacitance at any point in time, which permits calculation of the effective lifetime of the minority carriers τ and the surface generation speed S in the semiconductor. The schematic of the measuring apparatus is presented, and its operating characteristics are discussed. An example oscillogram of the capacitance relaxation of the $Si-SiO_2-Al$ structure shifted to the inversion region is presented.

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TRANSLATION

In Reply, Refer to:
15TC HT 23 1846-72
DDA Task No. 770-23-01

Date: 9 March 1973

ENGLISH TITLE: STRENGTH CALCULATIONS OF ICE COVER

SOURCE: Stroitel' stro 1 Arkhitektura, Vol. 6, 1970, pp 128-133

AUTHOR: D. F. Panfilov

LANGUAGE: RUSSIAN

REQUESTOR: CREEL-72
TRANSLATOR: L. KAMMER ASSOC
COUNTRY: USSR

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When the ice cover of rivers and inland waters is used for national economic purposes (construction, exploitation, and transportation), it becomes necessary to calculate its carrying capacity. However, this calculation cannot be always carried out, since many related problems are as yet unsolved.

This article deals with one of these problems -- verifying the strength suggestions for known values of forces and stresses acting on it. Existing methods for verifying the strength of ice cover are analyzed, studies made by the authors are outlined, and on the basis of these findings new suggestions are advanced. Here only the case of prolonged residence of loads on ice is considered.

All existing proposals pertain to calculating ice cover for allowable bending and involve only ice passages for motor use, as we know $1-3$. The greatest tensile strains build up at the under-surface of the ice cover and for compact loads in two mutually perpendicular directions have approximately the same value.

Analyzing these recommendations, we cannot fail to note that most researchers recommend using as allowable stresses ($\sigma = 80-120$ newtons/cm²) those that are close to the flexural strength of ice ($\sigma_{flex} = 100-150$ newtons/cm²) and even those exceeding this limit. However, when passages are in use, the ice withstands the loads thus calculated.

The disparity noted can be explained theoretically by one of the following factors. First, we can suspect that the theory of bending of thin plates which underlies the calculation of ice cover incorrectly describes its strain and yields overstated values of stresses. However, there are no grounds for this conclusion, since 1) ice cover deflections measured in natural settings agree with those calculated by theoretical formulas; 2) for surface stresses and 3) experiments with specimens vary linearly with ice thickness h . So the resistance of materials, derived on the assumption of a linear dependence between strains and stresses.